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commands to the system using a user interface 118 so as to control the channel tuned by the primary tuner 202. The connection to the DOCSIS tuner 203 allows the CPU 104 to control which data stream is provided to the DOCSIS modem 101 where there are multiple data transport streams comprised within the signal from the cable television system 204.

[0027] The set-top terminal 100 may also provide an agent application. The agent is a software application, i.e., a piece of software, executed by the central processing unit 104 to automatically select and record audiovisual programming and data desired by the user as specified by parameters input by the user. For example, the agent application may monitor an electronic programming guide for television programming of interest to the user based on user-input parameters. The agent may then automatically record this programming on the PVR disk 106 for subsequent review by the user.

[0028] The agent application may also monitor and/or retrieve from Internet servers any data of interest to the user based on user-input parameters. This data may include, but is not limited to, broadcast HTML pages accompanying an audiovisual advertisement or program, news files, health reports, electronic program guides, webcasts and any other data source for multimedia data that meets criteria indicated by the user. The agent application then automatically tunes and records, or acquires and caches the programming or data for later review by the user. For example, the stored advertisement HTML page may include a URL for the advertiser, where the user may get additional information at his/her convenience about the advertised product of interest without disrupting the current program viewing.

[0029] The user interface 118 allows the user to interact with and control the set-top terminal 100. For example, the interface preferably includes, for example, an application executed by the central processing unit 104 that provides display menus which can be navigated using a remote control unit (as part of the interface 118). With the user interface 118, the user is able to input commands to corresponding applications running on the central processing unit 104 to control, for example, the current or future recording of the incoming television signal from the primary tuner

202, select the desired web content to be downloaded (news, weather updates, etc.), or select other operations or set other parameters associated with an agent application.

[0030] In addition to the primary elements described above, the set-top terminal 100 of the present invention may also include a number of other features.

5 For example, an RF bypass 113 offered by traditional set-top devices allows direct signal routing to the connected television set or a video cassette recorder.

[0031] Additionally, in order to interface the set-top terminal 100 of the present invention with other devices and systems, a number of additional interfaces may be provided. For example, to interface a digital camera for multimedia mail  
10 applications, an IEEE1394 digital bus 107 or a Universal Serial Bus (USB) 108 may be utilized. To transfer the files to a near by PC, a 10/100BT interface 109, and the like, may be utilized. Connections to other peripherals 105, such as a printer and the like, are also shown.

[0032] The user interface 118 in the present invention consists of a user  
15 interface device 144, such as a remote controller, web-pad, Personal Digital Assistant (PDA), or any hand held consumer device with a touch pad screen. In the illustrated embodiment, the user interface device 144 comprises a versatile remote control unit (VRC) 144 that transmits and receives commands wirelessly to and from the set-top terminal 100. For example, the versatile remote control unit 144 typically would  
20 have an infrared (IR) signal emitter (not shown) that sends IR control signals to the set-top terminal 100. Once received, the IR commands are then processed by the central processing unit 104.

[0033] In one aspect of the present invention, the STT 100 includes a Versatile  
Remote Control Manager (VRCM) comprising a set of software and application  
25 programming interface (API) routines and associated drivers. These API's interface the VRCM with the applications that utilize the VRC key code re-mapping capability in conjunction with the versatile remote control unit 144. Preferably, the VRCM resides in the non-volatile memory of the CPU 104.

[0034] Referring now to Fig. 2, the versatile remote control unit 144 may  
30 include an integrated display 150 for soft key functions and a set of one or more fixed keys 152. However, it will be appreciated that the invention can be practiced with a

VRC 144 that does not include the integrated display 150, but rather uses the user's television (not shown) to exercise the versatility feature of the VRC 144. The integrated display 150 is preferably a touch screen display of a type well known in the art for allowing a user to program the soft keys that are displayed on the display 150 for each application.

[0035] An example embodiment of using the remote control system of the invention is described below. First, the user selects the application, for example, via a menu, and then selects the configuration menu of the application. Then, the user selects the versatile remote configuration feature for the application. The application may respond in one of two of the following ways depending on whether the versatile remote control unit 144 has the integrated display 150.

[0036] In the first case where the versatile remote control unit 144 does not have the integrated display 150, the application displays a menu on the user's television display device showing the different possible functional key selections and guides the user to select a soft key for a given function (typically for those functions used most frequently). The application may facilitate this function for any customized sequence of frequently used soft keys. As part of the steps taken in the first case, the application uses the VRCM API's to map the versatile remote control unit 144 to the functions selected by the user.

[0037] In the second case where the versatile remote control unit 144 has the integrated display 150, the application first registers with the VRCM for future identification. Then, the application downloads the image corresponding to the configuration of the remapped soft keys to the versatile remote control unit 144. The

download operation is achieved via the corresponding VRCM API's. The new configuration is visual only, i.e., the re-mapping appears to be different to the user, but the soft key code values remain the same although their function is based on the new definition that has been set by the application as instructed by the user. When the user then selects one of the re-mapped soft keys, a Receive VRCM driver routine forwards or conveys the key value to the application via the corresponding API. Then, the application takes action based on the associated function or set of functions assigned to the corresponding soft key. When multiple applications are taking advantage of